California Regional Water Quality Control Board
San Francisco Bay Region

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Fact Sheet November 2006

Water Board Approves Cleanup Plan for Hookston Station Groundwater Contamination Site

Pleasant Hill, California

This Fact Sheet has been prepared to update community members on the status of the environmental investigations at the Hookston Station Site in Pleasant Hill, California.

Inside:

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CLEANUP PLAN SUMMARY

The Hookston Station Feasibility Study/Cleanup Plan was prepared by the responsible parties and provides a basis for determining which remedial alternative is most appropriate for protecting human health and the environment and managing long-term risk for chemicals associated with the Hookston Station Site (Figure 1). The selected cleanup alternative includes the following components:

- Zero-valent iron permeable reactive barrier (PRB) for A-Zone ground water (Figure 2).
- Chemical oxidation for B-Zone ground water
- Institutional controls for a single location of arsenic-impacted subsurface soil on the Hookston Station Parcel in the form of a soil management plan
- Vapor intrusion prevention systems
- Removal of private wells from residences that overlie the downgradient study area
- Institutional controls to restrict future development of water supplies within the impacted area until final ground water cleanup goals are achieved.

CLEANUP PLAN REVIEW PROCESS

The responsible parties submitted the Feasibility Study/Cleanup Plan (FS) in July 2006. Board staff issued a fact sheet in July announcing a thirty-day comment period, and convened a public meeting on August 10, 2006, during the comment period. The Water Board conditionally approved the FS on October 3, 2006, and required the RPs to submit an addendum or revised FS that satisfactorily resolved the following issues: (1) time table; (2) characterization of A-Zone hydrostratigraphy; (3) vinyl chloride in soil vapor; (4) groundwater capture zone for the proposed permeable reactive barrier; (5) cost of institutional controls; (6) contingency plan, should the selected remedy not function as expected; (7) potential effects of the Pitcock Petroleum groundwater plume on the selected remedy; and other editorial details. The RPs submitted an addendum on October 27, 2006, and Board staff has concluded that the issues are resolved. Board staff prepared a summary of comments and responses to those comments and approved the FS/Cleanup Plan on November 2, 2006.

SPECIFIC ISSUES RAISED IN COMMENTS ON THE CLEANUP PLAN

Concerns about the following topics were raised regarding the Cleanup Plan. Brief clarification is provided for each topic. If you would like further information on these or any other specific topics, please contact Water Board staff.

Time Frame

The schedule proposed in the Feasibility Study represents the fastest time frame that can reasonably be expected for completing the required tasks in a manner that is safe, effective, and consistent with legal requirements. Water Board staff will work closely with the RPs to facilitate timely review of submittals.

Remedial construction efforts require significant planning, coordination, permitting, and approval durations to ensure that the project is completed in a safe and effective manner. Following approval of the Feasibility Study, the RPs must perform field and laboratory tests related to the selected remedial technologies in order to design the remediation systems. However, some of this work is currently underway. Based on the results of these tests, the RPs then will design the full remediation systems. The Regional Board must then review and approve this design with input from the community via the Community Working Group. Once the design is approved, the RPs must obtain a variety of permits, negotiate access agreements, and contract with vendors before any construction can begin.

The Final Site Cleanup Requirements Order, which will be prepared pursuant to Water Board Section 13304 and adopted by the Water Board in early 2007, will include requirements for milestone completion dates and final cleanup concentrations. The draft Order will be circulated for public comment and reviewed at a Working Group meeting prior to the Water Board hearing.

Adaptability of the Selected Remedy

The PRB could be extended if groundwater flow patterns change or if performance monitoring indicates the PRB is not performing as expected. For the chemical oxidation component, injection points could be added or additional injection events could be added. However, we don't expect very rapid changes in contaminant concentrations following startup of the cleanup technologies, so we will need to observe system performance for several quarters before considering adaptive changes.

Combining Multiple Cleanup Technologies

In general, the proposed remedy for the A-Zone (in-situ treatment with the PRB) is incompatible with groundwater extraction and treatment ("pump and treat"), and it would make no sense to combine the two technologies on a particular site. Groundwater extraction might hasten the flow of groundwater through the PRB but it could have the negative effect of reducing residence time in the treatment zone, thereby potentially limiting the effectiveness of the PRB.

Although groundwater extraction is technically implementable, the low permeability soils in the A-Zone would require an extensive well network with no guarantee that the wells would be effective in drawing and treating water in the areas between the wells. Siting of wells is strongly controlled by access. Using public rights-of-way generally assures ready access, but may not allow favorable positioning for optimum well performance.

Regarding the B-Zone, the proposed remedy (in-situ treatment using injection of an oxidant) typically is not combined with extraction technologies, unless the treated water is going to be re-injected – a difficult and problematic process. The reason for not combining in-situ with extraction and treatment is that the extraction system would result in removing whatever substance was injected into the ground water (in this case, potassium permanganate).

Health-Protectiveness Until Final Cleanup Goals Are Achieved

The vapor intrusion prevention systems have been implemented along with water well abandonments to eliminate exposures to TCE at concentrations above conservative theoretical risk-based screening levels. The vapor intrusion prevention systems are adaptable in that they are relatively easy to install and have readily adjustable operating time periods. The vapor intrusion prevention systems eliminate the residential exposure to TCE in indoor air at concentrations above the risk-based cleanup goals pending reduction of TCE in A-Zone ground water.

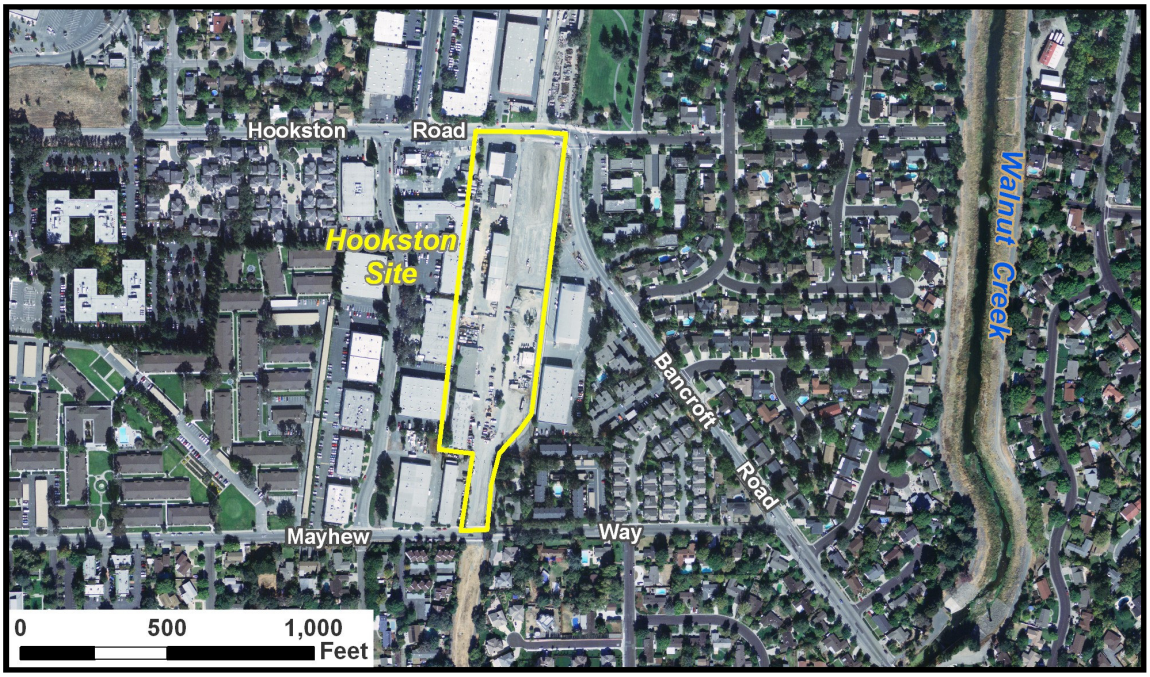

Figure 1: Site Map

SITE DESCRIPTION AND BACKGROUND

Hookston Station is an 8-acre parcel located at the intersection of Hookston and Bancroft Roads in Pleasant Hill, California. The site is currently occupied by commercial and light industrial businesses. Residences surround the site on all sides.

The site was formerly owned by the Southern Pacific Transportation Company and was used for a rail line and a station (Hookston Station). The property was transferred from Southern Pacific to Daniel C. Helix in 1983, and the Contra Costa County Redevelopment Agency (CCCRA) subsequently purchased the eastern portion of the site in 1989. Union Pacific Railroad (UPRR) assumed responsibility for Southern Pacific's portion of the project following the merger with Southern Pacific in 1996.

Investigations regarding environmental impacts to soil and groundwater at the site were initially conducted between 1989 and 1996 by various environmental consulting firms on behalf of Contra Costa County and Mr. Helix. These investigations discovered the presence of both petroleum-based products (such as gasoline) and chlorinated solvents (which are commonly used as degreasers) in the soil and groundwater at the site. The solvents are also known as volatile organic compounds (VOCs).

Depth to groundwater at the site is about 25 to 30 feet below ground surface. Fine-grained clays and silts are present from the ground surface to depths up to 40 ft below ground surface. This zone is identified as the A Zone. Beneath the A Zone is the B Zone, a relatively continuous sand unit between the approximate depths of 30 and 70 ft below ground surface.

Groundwater is not a source of drinking water because all residences and businesses are served by Contra Costa Water District. Some homes in the area have backyard wells that are used for irrigation and filling swimming pools. Site investigation data show that groundwater contamination from this and other properties has commingled and migrated in a north-northeasterly direction, and has impacted an area of approximately 35 acres. VOCs have been detected in shallow groundwater at concentrations above drinking water standards set by the state and the federal government. The solvent TCE (trichloroethylene), which migrates from groundwater through the soil as a gas, was also detected in the indoor air of several homes located over the core of the groundwater plume. The concentrations of TCE in indoor air are marginally above regulatory screening levels. Several permanent sample points have been installed to better characterize the soil gas and groundwater.

It is important to note that although Mr. Helix and UPRR are currently performing environmental investigations and cleanup at the Hookston Station site, the environmental releases that resulted in the current soil and groundwater impacts were not caused by either of these parties. Further, some of the groundwater contamination originated from properties owned by others in the vicinity of the Hookston Station site. It is believed that contaminants such as PCE (perchloroethylene or tetrachloroethylene) and MTBE (methyl tert butyl ether) did not originate on the Hookston Station site. The Water Board has already required three parties near Vincent Road to perform site investigation work, which has identified a likely source of PCE near the boundary between two properties. Additional site investigation is needed at both properties, and we are in the process of requiring this additional work. The Water Board will name responsible parties based on the results of a fuller site investigation. The Pitcock Petroleum / Haber Oil facility at 220 Hookston Road is a current Leaking Underground Fuel Tank site. The Water Board will require the responsible parties to conduct additional investigation and cleanup, as appropriate.

SITE DOCUMENTS

All primary reports are housed at the Pleasant Hill Library, located at 1750 Oak Park Blvd., Pleasant Hill (phone: 925-646-6434). Many documents are available on the Water Board's Website:

http://www.waterboards.ca.gov/sanfranciscobay/sitecleanupdocs.htm

The community is also invited to view documents and correspondence related to Hookston and other nearby sites at http://geotracker.waterboards.ca.gov/.

The following case numbers apply to the Hookston Station Area:

Hookston Station 07S0156
Vincent Road at Mayhew Way..... 07S0183
Pitcock Petroleum/Haber Oil..... 07-0432

REGULATORY OVERSIGHT

The California Regional Water Quality Control Board (Water Board) has been the lead agency for the site since December 2000, and is currently overseeing compliance with the Site Cleanup Requirements (Order No. R2-2004-0081 dated September 15, 2004).

The Water Board oversees more than 3,000 site cleanup cases in the Bay Area, including more than 2,000 leaking fuel tank cases. Water Board staff direct investigation or cleanup work and set cleanup standards under Water Code authority. Responsible parties (e.g. past operators, landowners, or lessees) propose specific measures, perform the actual work, and submit technical reports documenting task completion. As part of this process, we circulate key documents, such as draft cleanup plans, to interested persons and provide an opportunity for comment on these documents. Interested persons include other agencies, local officials, non-profit organizations, and interested landowners and residents/occupants in the site vicinity.

NEXT STEPS

The Final Site Cleanup Requirements Order, which will be prepared pursuant to Water Board Section 13304 and adopted by the Water Board in early 2007, will include requirements for milestone completion dates and final cleanup concentrations. The draft Order will be circulated for public comment and reviewed at a Community Working Group meeting on December 7, 2006.

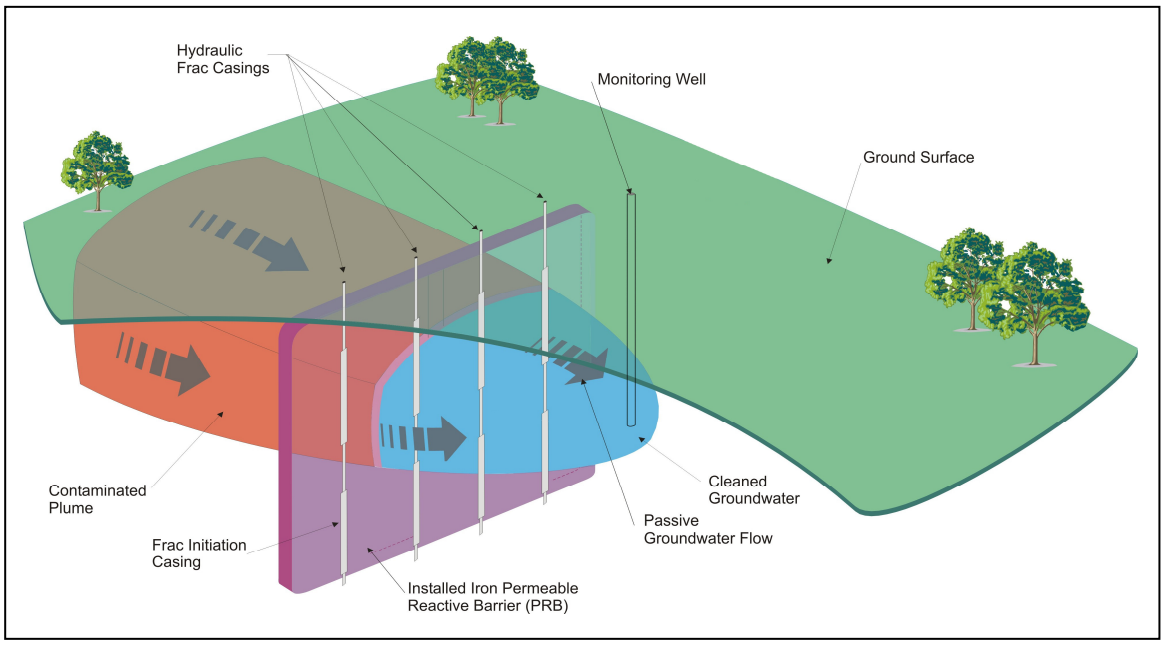

Figure 2: Example of an injected zero-valent iron permeable reactive barrier. Graphic courtesy GeoSierra, Inc.